Amendments to the Specification:

On page 5, add the following paragraphs following paragraph [0018]:

[0018A] In accordance with one aspect, the present invention is a method of transmitting data in a wireless MC-CDMA system to a set of M users. The method includes providing a transmitter system with N sub-carriers divided into G groups, N and G being integers; determining an instantaneous group SNR that is calculated using an effective channel function for each user in each group of subcarriers; and for each user and in each group of sub-carriers, using the instantaneous SNR of an equivalent single sub-carrier as a metric for resource allocation at the transmitter.

[0018B] In accordance with another aspect, the present invention is a transmitter for wirelessly transmitting data to a set of M users. The transmitter includes a modulator, circuitry for calculating, and resource allocation means. The modulator is for modulating N sub-carriers that are divided into G groups, where N and G are integers. The calculation circuitry is for calculating an instantaneous group SNR using an effective channel function for each user in each group of sub-carriers. The resource allocation means is for allocating, using the instantaneous SNR of an equivalent single sub-carrier as a metric, at least one resource for each user and in each group of sub-carriers.

[0018C] In accordance with another aspect, the present invention is a program of machine-readable instructions, tangibly embodied on an information bearing medium and executable by a digital data processor, to perform actions directed toward transmitting data in a wireless multi-carrier spread spectrum communication system. The actions include providing a transmitter system with N subcarriers divided into G groups, where N and G being integers. They further include determining an instantaneous group SNR that is calculated using an effective channel function for each user in each group of sub-carriers. They also include, for each user and in each group of sub-carriers, using the instantaneous SNR of an equivalent single sub-carrier as a metric for resource allocation at the transmitter.

Replace the paragraph [0053] at page 12, with the following rewritten paragraph:

[0053] That is, an N sub-carrier MC-CDMA system (consisting of G groups of N/G sub-carriers) may be interpreted as an equivalent OFDM system with ~~N/G~~ G sub-carriers. Such an interpretation effectively turns a MC-CDMA system (in its current configuration) into a multi-carrier system similar to a conventional OFDM system. Equation (6) allows the effective sub-channel power to noise ratio to be evaluated and conventional bit loading schemes based on channel state information to be implemented; i.e. bits will be loaded into the N/G sub-carriers in a group as though they were a single sub-carrier.

Replace the paragraph 78 at page 18, with the following rewritten paragraph:

[0078] ~~Now, the optimization problem may be stated as,~~

$$\cancel{\text{minimize} \sum_{k=1}^{N/G} b_k}$$

$$\cancel{\text{i.} \quad \text{subject to} \quad -\sum_{k=1}^{N/G} P_k - P_{total} \le 0 \quad \text{for } k=1, 2, \ldots N/G}$$

$$\varepsilon_k - \bar{\varepsilon}_0 \le 0$$

Now, the optimization problem may be stated as,

$$\underline{\text{minimize} -\sum_{k=1}^{G} b_k}$$

$$\text{i.} \quad \text{subject to} \quad -\sum_{k=1}^{G} P_k - P_{total} \le 0 \quad \text{for } k=1, 2, \ldots G \qquad (10)$$

$$\varepsilon_k - \bar{\varepsilon}_0 \le 0$$

Replace the paragraph 79 at page 18, with the following rewritten paragraph:

[0079] where b_k is the number of bits allocated to the k^{th} (equivalent) sub-carrier, P_k is the power assigned to the k^{th} (equivalent) sub-carrier, P_{total} is the total power available to the user, ε_k and $\bar{\varepsilon}_k$ is the BER and BER bound respectively, and ~~N/G~~ $\underline{G}$ is the total number of (equivalent) sub-carriers. The problem written as a Lagrangian is,

Replace the paragraph 80 at page 18, with the following rewritten paragraph:

[0080]

$$\cancel{J_R = \sum_{k=1}^{N/G} b_k + \lambda \sum_{k=1}^{N/G} P_k}$$

$$J_R = -\sum_{k=1}^{G} b_k + \lambda \sum_{k=1}^{G} P_k \qquad (11)$$

Replace the paragraph 81 at page 18, with the following rewritten paragraph:

[0081] ~~where λ is the Lagrange multiplier. After solving for P_k and λ, the expression for P_k that maximizes the data rate is,~~

~~i.~~ $$\cancel{P_k = \frac{\sigma^2 \ln(\bar{\varepsilon}_k / 0.2)}{1.6|H_{eff.k}|^2} + \frac{P_{total}}{N/G} - \frac{1}{N/G} \sum_{i=1}^{N/G} \frac{\sigma^2 \ln(\bar{\varepsilon}_i / 0.2)}{1.6|H_{eff.i}|^2}}$$

<u>where λ is the Lagrange multiplier. After solving for P_k and λ, the expression for P_k that maximizes the data rate is,</u>

<u>i.</u> $$\underline{P_k = \frac{\sigma^2 \ln(\bar{\varepsilon}_k / 0.2)}{1.6|H_{eff.k}|^2} + \frac{P_{total}}{G} - \frac{1}{G} \sum_{i=1}^{G} \frac{\sigma^2 \ln(\bar{\varepsilon}_i / 0.2)}{1.6|H_{eff.i}|^2}} \qquad \underline{(12)}$$